REMARKS

Claims 1-36 are pending in this application. By this Amendment, claims 12, 14 and 31 are amended to correct minor grammatical errors, and claim 17 is amended to more particularly recite the subject matter of the invention. Also by this amendment, new claims 37-41 are added. No new matter is entered by the amendments to claims 12, 17 and 31 or by the addition of new claims 37-41.

Applicant acknowledges with appreciation the Examiner's indication that claims 1-16 are allowable.

Claims 1-41 are presented to the Examiner for further or initial prosecution on the merits.

In the Office Action mailed on March 29, 2004, claims 17-36 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,306,906 to Aoki et al. Independent claim 17 has been amended and is believed to be allowable over the cited prior art reference. Particularly, claim 17 now recites that each one of a plurality of readout gate regions is disposed contiguous to an associated one of the photoelectric converters and that each one of the readout gate regions is equal to each other one of the readout gate regions in relative positional relationship with its associated photoelectric converter. An example of this feature of the invention embodied by claim 17 is illustrated in FIG. 16 of the application as filed.

In FIG. 16, each readout gate region 240 associated with a photoelectric converter 222 is equal to each other readout gate region 240 associated with a respective other photoelectric converter 222 in the relative positions of the readout gate

regions with respect to their associated photoelectric converters. In the image pick-up device illustrated in FIG. 16, each readout gate region 240 is positioned at a lower left of the associated photoelectric converter.

Applicant submits that Aoki does not disclose or suggest at least the limitations set forth above and recited in claim 17 as amended.

In contrast to claim 17, Aoki discloses that charge read gates, indicated by arrows 6 in FIG. 1A, are not equal to each other in their relative positional relationships with associated photoelectric converters 3. Rather, as illustrated in FIG. 1A, Aoki discloses that the signal charges read out through the charge read gates of half of the photoelectric converters 3 are read out at a lower left direction of the photoelectric converters, while the signal charges read out through the charge read gates of the other half of the photoelectric converters 3 are read out at an upper left direction of the photoelectric converters 3. Thus, the positions of the charge read gates of Aoki relative to associated photoelectric converters are not equal for each charge read gate and associated photoelectric converter, as recited in amended claim 17.

Because the charge read gates of Aoki are not equal in relative positional relationship to the photodiodes, if the position of each photodiode is shifted somewhat to the upper or lower direction by an error of photolithography, the relative spatial relationship between the photodiode and the vertical charge transfer channel will change, and degradation of the image signal will result. However, since the relative positional relationship of each readout gate region to an associated photoelectric converter is equal in claim 17, image signal integrity and consistency may be maintained despite an error, for example, in photolithography.

Thus, claim 17 is believed to be patentably distinct over the Aoki reference, and a notice to such effect is respectfully requested. Further, since claims 18-36 depend directly or indirectly from claim 17, claims 18-36 are believed to be allowable over Aoki for at least the reasons claim 17 is allowable.

Accordingly, favorable reconsideration and withdrawal of this rejection are respectfully requested.

New claims 37-41 are believed to be allowable for at least the reasons set forth below.

Independent claim 37 recites, in part, "a multiplicity of readout gate regions formed in a semiconductor substrate, each readout gate region disposed between an associated one of said photodiodes and an associated one of said charge transfer channels such that a positional relationship between each readout gate region and the associated photodiode and the associated vertical charge transfer channel is the same for all of the readout gate regions."

Therefore, claims 37-41 are believed to be allowable over the cited prior art reference for at least the reason that Aoki fails to disclose a positional relationship between readout gate regions that are disposed between an associated photodiode and an associated vertical charge transfer channel being the same for all readout gate regions.

Accordingly, an early and favorable action on claims 37-41 is respectfully requested.

As the cited prior art reference neither anticipates nor renders obvious the present invention as claimed, claims 1-41 are believed to be in condition for allowance, and a notice to such effect is respectfully requested.

If the Examiner believes that additional discussions or information might advance the prosecution of the application, the Examiner is invited to contact the undersigned at the telephone number listed below to expedite resolution of any outstanding issues.

In view of the foregoing amendments and remarks, reconsideration of this application is hereby requested, and an early and favorable action upon all of the claims is earnestly solicited.

Please charge any fee deficiency or credit any overpayment to Deposit Account No. 01-2300, **referencing client matter number 107317-00017.**

Respectfully submitted,

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